Predator Reduction to Support Caribou Recovery: 2024-25 Summary

B.C. Ministry of Water, Land and Resource Stewardship

Caribou Recovery Program

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Executive Summary

The reduction of predator population densities has been shown to be an effective interim action for recovering threatened caribou herds when applied in an adaptive management framework. Predator reduction programs require scientific rigour, high standards for humaneness, and ongoing monitoring and assessment. During the winter of 2024-25, aerial-based wolf reduction was applied to 15 of the 54 identified woodland caribou populations in British Columbia. Within those 15 caribou ranges, ground-based cougar reduction was applied in two of them. A total of 351 wolves were removed through aerial shooting (with an additional 15 wolves live-captured and translocated to Colorado) and six cougars were removed through ground-based hunting, at a total cost of approximately $1.5 million for 2024-25. Wolf reduction objectives were achieved in all but one of the 15 treated herds, and these efforts are expected to contribute to continued caribou population stabilization or growth in those herds. Removal of identified cougars from caribou habitat is also anticipated to contribute to caribou recovery in one Southern Group herd (Central Selkirks). Monitoring of the caribou population response to these predator reductions will continue throughout the year. It is imperative to recognize that predator reduction is only considered in conjunction with other caribou recovery efforts. When caribou populations achieve sufficient numbers and population dynamics that are self-sustaining (i.e., birth rate is equal to or greater than death rate) because of improved habitat conditions and balanced predator-prey dynamics, predator reduction will discontinue.

Background

Woodland caribou (*Rangifer tarandus caribou*) populations have experienced significant declines in British Columbia. The Boreal caribou ecotype is designated federally as “Threatened” and is “Red-Listed” provincially, while the Northern Mountain ecotype is designated federally as a “Special Concern” and is “Blue-Listed” provincially. The Southern Mountain ecotype was designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as “Endangered” in 2014 (with at least eight local population units under imminent threat) and is designated as “Threatened” federally and “Red-Listed” provincially.

An unsustainable rate of predation on caribou by wolves (*Canis lupus*) due to apparent competition – defined as an indirect interaction between two or more prey species through a shared predator – is identified as the primary proximate cause of caribou population declines in B.C. (Seip 1991). The ultimate cause of this interaction is landscape disturbance, resulting in higher proportions of early seral habitat that support primary prey populations (i.e., moose, elk, and deer) above historic levels. This is due primarily to forestry activity (Ehlers et al. 2016). Increased abundance and distribution of primary prey have elevated wolf population densities well beyond the levels that would have occurred in caribou ranges under pre- disturbance conditions. Wolf

predation can be further amplified by linear features in caribou habitat, such as resource roads and clearings created to aid natural resource exploration, that enable wolves to travel more efficiently and encounter caribou at higher rates than would have occurred in an undisturbed landscape (Dickie et al. 2017). Throughout most of B.C., wolves are the primary predators responsible for high predation rates on caribou. However, at the southern extent of caribou ranges in B.C., cougar (*Puma concolor*) predation is often a significant contributor to caribou mortality (Kinley and Apps 2001, Wittmer et al. 2005).

The interactions between caribou, predators, and primary prey populations can be managed to benefit caribou in several ways: 1) managing the habitat composition in caribou ranges to support primary prey and predator abundance that are sustainable for caribou, 2) actively managing primary prey populations so the landscape supports predators at sustainable levels for caribou, and 3) directly reducing predator populations (Serrouya et al. 2019).

Although landscape-level habitat management is the key to achieving and supporting self-sustaining caribou populations, it may be decades before the benefits of habitat management are attained. Efforts to conserve and increase caribou population through habitat protection and restoration efforts are ongoing throughout the province. Direct management of primary prey populations has less lag time between its application and realized benefits, and the direct management (i.e., reduction) of predators has the most rapid effect. The direct management of primary prey or predator populations will not address the main causes of caribou population declines if habitat protection and restoration does not occur concurrently. If the management of predators and their primary prey is halted and these habitat management issues have not been addressed, threatened caribou populations are likely to revert to a declining trend towards extirpation (i.e., local extinction).

A five-year pilot project in the South Peace region that ran from 2015 to 2019 demonstrated the effectiveness of intensive wolf reduction to reverse declines in threatened caribou populations (Bridger 2019). Ongoing research has shown that wolf reduction is the only recovery measure that has consistently increased caribou populations when applied as a standalone action (Lamb et al. 2024). The positive effects of predator reduction can be further enhanced when combined with additional short-term recovery actions, such as maternal penning and supplemental feeding (Heard and Zimmerman 2021, McNay et al. 2022, Lamb et al. 2024). Public engagement and consultations with Indigenous communities were then conducted in the fall of 2021 to seek an additional five-year window to continue predator reduction efforts across 13 of B.C.'s 54 caribou herds.

In accordance with the provincial Caribou Recovery Program Interim Aerial Wolf Reduction Procedure (B.C. FLNRORD 2021), proactive wolf reduction continued during the winter of 2024-25 on a subset of provincial caribou herds (Figure 1). These predator reduction activities took place from December 2024 to the end of March 2025. Wolves were dispatched by accurate aerial shooting from a helicopter, as this is deemed the most humane and effective method of reducing wolf populations across large geographical areas, while eliminating the risk of harm to other species that might have occurred if other methods were used. Ministry of Water, Land and

Resource Stewardship biologists and hired contractors followed the Province's Standard Operating Procedures for Aerial-Based Live Capture and Lethal Removal of Wolves (WLRS 2022).

The extent and topography of the areas that must be covered to effectively reduce wolf populations in caribou habitat necessitates the use of aircraft. The combination of GPS/VHF radio-tracking collars and aerial shooting to humanely kill wolves has been demonstrated to be an effective method, with the intent of removing entire wolf packs and reducing the risk of predation on caribou populations (Bridger 2019). The federal and provincial objective for wolf densities in caribou recovery areas is less than three wolves per 1000 km^2. To achieve that objective, wolf reduction generally requires the removal of 70–90% of wolves within a treatment area. Wolves are tracked and lethally removed during the winter months when snow depth concentrates wolves and their primary prey in valley bottoms, and when their mobility is limited by snow. Reducing the number of wolves during the winter has an additional benefit of providing caribou a reprieve from high wolf predation rates during caribou calving season in the spring (a vulnerable period for cows and their calves). Intensive wolf reduction must occur on an annual or biennial basis to account for wolves' high reproductive capability and their ability to rapidly recolonize a treated area from adjacent areas.

Due to their solitary and reclusive behaviour, cougars cannot be effectively removed using aerial-based methods. Rather, cougars are lethally removed in caribou habitat by surveying for signs of a cougar's presence and tracking that specific individual using the services of experienced dog handlers.

Summary

Provincial

In total, 351 wolves were lethally removed via aerial shooting in the winter of 2024-25, with an additional 15 wolves live-captured and translocated to Colorado to support that state's wolf reintroduction efforts. Six cougars were removed via ground-based hunting (Table 1). To achieve sufficient wolf reduction levels, aerial crews generally made multiple reduction attempts over the course of the winter across the treatment areas to reduce wolf densities below three wolves per 1,000 km^2. Initial estimates suggest that objectives for wolf densities were achieved across most treatment areas.

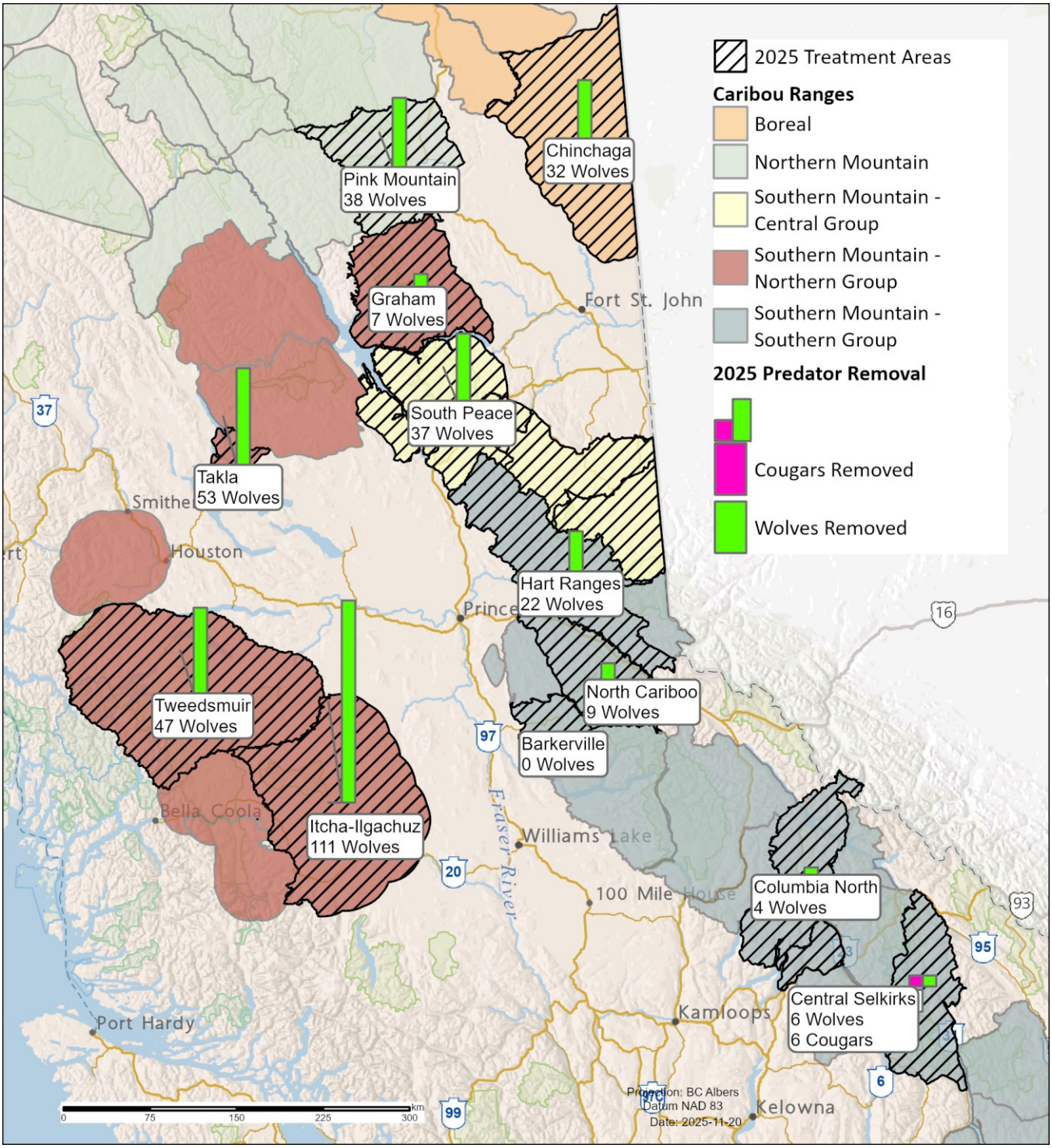

Figure 1. Distribution of predator reduction to support caribou recovery in 2024-25
Baseline information on caribou in British Columbia is available on the interactive web map)

Table 1. Predator reduction summary and associated costs per caribou herd in 2024-25.

Ecotype and Herd		Wolves Removed	Cougars Removed	Cost[1]
Boreal				
	Chinchaga	32	--	$110,000
Northern Mountain				
	Pink Mountain	38	--	$125,000
Southern Mountain - Central Group				
	South Peace[2]	37	--	$150,250
Southern Mountain - Northern Group				
	Graham	7	--	$150,000
	Itcha-Ilgachuz	111	--	$193,000
	Tweedsmuir-Entiako	47	--	$250,100
	Takla	53	--	$167,100
Southern Mountain - Southern Group				
	Central Selkirks	6	6	$104,600
	Columbia North[3]	4	0	$ 69,000
	Hart Ranges	22	--	$ 60,000
	North Cariboo	9	--	$ 61,200
	Barkerville	0	--	$ 57,400
Total		**366**[4]	**6**	**$1,497,650**

[1] Costs may include helicopter services and fuel, fixed-wing aircraft services, radio-collar purchase, equipment, and accommodations.
[2] The South Peace range includes the Klinse-Za, Kennedy Siding/Burnt Pine, Quintette, and Narraway caribou ranges.
[3] This includes portions of the Columbia South and Frisby Boulder ranges, where predator-prey dynamics influence the Columbia North herd.
[4] This includes 15 wolves that were live-captured from the South Peace and Hart Ranges ranges and translocated to Colorado.

The cost of the 2024-25 predator reduction activities was $1,497,650. The primary expense was the contracting of helicopter services to support the aerial removal of wolves, while secondary expenses included costs associated with GPS collar purchases, fuel, fixed-wing aircraft support, field equipment, accommodation for crews, and the hiring of experienced dog handlers in treatment areas where cougars were removed. All predator reduction activities were authorized by provincial *Wildlife Act* permits, Animal Care Applications, B.C. *Park Act* Letters of Authorization, and federal Aviation Security Exemptions.

The response of caribou populations to 2024-25 predator reductions will be assessed further in 2025 and into the winter of 2025-26. Predator reduction efforts have continued to support caribou population growth through increased calf recruitment (i.e., the number of calves surviving through late winter) and adult survival rates. Further treatment and monitoring will be ongoing to fully assess the population-level effects over time. A recent study by Lamb *et al.* (2024) estimated that Southern Mountain caribou populations have increased by 52% (as of 2023) since the implementation of predator reduction in their ranges. Following the publication of the Lamb *et al.* (2024) research, ongoing monitoring suggests further population growth in these herds over the

past two years. Specific longer-term examples include the Kennedy Siding/Burnt Pine herd, which has nearly quadrupled in size since 2015 through a combination of wolf reduction and supplemental feeding. The Klinse-Za herd has increased in size by nearly five-fold since 2015, through wolf reduction and maternal penning.

Although the rate at which wolves recolonize the treatment areas fluctuates annually, wolf populations have shown to be resilient, recovering in the treatment areas at rates from 30% to 100% by the following winter. The ability of wolf populations to expand through reproduction and dispersal reduces any risk associated with broad, population-level impacts on wolves in B.C. Wolf recovery and recolonization within and adjacent to treatment areas will continue to be monitored annually.

Boreal caribou herds

Chinchaga

The Chinchaga caribou herd is the only Boreal ecotype that currently receives wolf reduction treatments to support population recovery. The Chinchaga herd was selected as a recipient of wolf reduction treatments in response to sharp population declines over the past 10 years, and the program was developed in collaboration with the Blueberry River First Nations. It was initially implemented for three years (2019– 2021) and renewed for an additional five years in the fall of 2021. The winter of 2024-25 was the sixth year of wolf reduction treatments, which does not include 2023-2024 when wolf reduction efforts were cancelled due to poor field conditions. Winter conditions in 2024-25 were generally conducive to tracking, locating, capturing, and removing wolves. A good base of snow accumulation early in the winter led to efficient removal efforts. A total of 32 wolves were removed from a treatment area covering 13,900 km^2, with an estimated reduction rate of 76% and a cost of $110,000.

Eight wolf packs were encountered, ranging in size from two to 10 wolves, with an average pack size of five individuals. Wolves were concurrently removed by the Alberta government in that province, where the Chinchaga herd boundary spans the B.C.-Alberta border. It was estimated at the time that 12 wolves remained within or immediately adjacent to the B.C. Chinchaga treatment area, for a remaining wolf density of 0.9 wolves/1,000 km^2. This rate of reduction, and the resulting wolf density, are expected to contribute positively to caribou population stability or growth in this area. The Chinchaga caribou herd was previously declining at approximately 4.2% annually in the years leading up to the initiation of wolf reduction and has since been increasing at approximately 6.7% annually as of 2024. The minimum count of caribou during calf recruitment surveys has increased in the Chinchaga herd nearly every year since wolf reduction was implemented in 2019 (from 103 to 241 observed caribou). However, following the winter of 2024 when no wolf reduction occurred, calf recruitment rates declined to 14% calves in the population, and 26 calves per 100 cows, suggesting a halt in population growth for that year. Furthermore, three wolf predation events occurred on GPS-collared female caribou in that year – the first

confirmed wolf predation events since the wolf reduction efforts started in that treatment area. These outcomes show the potential implications of halting wolf reduction efforts, even for just one year. The effects of the 2024-25 wolf reduction efforts on this caribou population will be assessed in 2025-26.

Northern Mountain caribou herds

Pink Mountain

The Pink Mountain caribou population is the only Northern Mountain ecotype that currently receives wolf reduction treatments to support caribou recovery. The Pink Mountain herd was selected in response to observed population declines in past decades, and the program was developed in collaboration with the Blueberry River First Nations. The program was initially implemented for three years (2019–2021) and then renewed for an additional five years in the fall of 2021. The winter of 2024-25 was the seventh year of wolf reduction for this herd. During the winter's reduction efforts, 38 wolves were removed through helicopter-based, aerial shooting in a treatment area covering 9,600 km^2. Winter weather conditions were mixed in December through March, making for optimal conditions at times and challenging conditions at other times. However, snow levels and temperatures for tracking and locating wolves were much improved compared to the previous winter, which resulted in increased efficiency in 2024-25. The wolf reduction efforts cost $125,000, primarily associated with helicopter services, helicopter fuel, GPS collar purchases, and crew accommodations.

Nine wolf packs were encountered, ranging in size from two to 12 wolves, with an average pack size of five individuals. Two lone wolves were also encountered, one of which was removed. Following the removal efforts, it was estimated that approximately 11 wolves remained within or immediately adjacent to the Pink Mountain treatment area, for a remaining wolf density estimate of 1.1 wolves/1,000 km^2 and a wolf reduction rate of 78%. With this reduction rate and the resulting change in wolf population density, it is expected that these efforts will continue to contribute to caribou population growth. The Pink Mountain caribou population was surveyed in 2025 with a resulting population estimate of 1,068 caribou – representing a population growth of 91% since the previous population estimate in 2021 (559 caribou). These survey results provide evidence that the Pink Mountain caribou population has responded very strongly to wolf reduction. The 2025 survey also indicated a moderately high level of calf recruitment, with 18% calves in the population and a ratio of 36 calves per 100 cows, indicative of population growth.

Southern Mountain – Central Group caribou herds

South Peace (Kennedy Siding/Burnt Pine, Klinse-Za, Narraway, and Quintette)

The South Peace wolf reduction program includes the Klinse-Za, Kennedy Siding/Burnt Pine, Quintette, and Narraway caribou herds. The South Peace herds were selected for wolf reduction treatments in response to rapid population declines observed in past decades. The program was initially implemented for seven years (2015 to 2021) and renewed for an additional five years in the fall of 2021. The winter of 2024-25 was the 11th year of aerial wolf reduction across the South Peace treatment area. During the winter's reduction efforts, 30 wolves were removed through helicopter-based, aerial shooting from a treatment area covering 21,500 km^2. An additional seven wolves were live-captured and relocated to Colorado to support that state's wolf reintroduction efforts. Winter weather conditions varied through much of the winter. In the early winter, conditions were good for tracking and locating wolves. However, as the winter progressed, conditions began to deteriorate, which led to challenges in tracking and locating wolves. The program cost $150,250, primarily associated with helicopter services and GPS collar purchases.

Fourteen wolf packs were encountered, ranging in size from two to 14 wolves, with an average pack size of four individuals. One lone wolf was also encountered and was collared. It was estimated that 36 wolves remained within or immediately adjacent to the South Peace treatment area, for a remaining wolf density of 1.7 wolves/1,000 km^2 and a wolf reduction rate of 51%. Although the reduction rate was lower than in previous years (primarily due to challenging conditions in late winter) the resulting wolf density is expected to contribute positively to caribou population stability or growth. Following last year's limited wolf reduction efforts due to poor weather conditions, calf recruitment across the South Peace herds was moderate but lower than observed in previous years (ranging from 15% to 18% calves in the population). Since the onset of wolf reduction in 2015, the combined South Peace caribou herds have increased from approximately 165 to 530 caribou (an increase of 220%). The Klinse-Za herd, where wolf reduction and maternal penning were used, has increased nearly five-fold to 187 caribou. The Kennedy Siding/Burnt Pine herd, where wolf reduction and supplemental feeding was used, has nearly quadrupled in size to 166 caribou (Heard 2025). Lastly, the Quintette population appears to have tripled in size to approximately 174 caribou through wolf reduction alone. Monitoring of the Narraway population is ongoing but has presented challenges in obtaining population metrics to assess the effectiveness of the wolf reduction efforts thus far.

Southern Mountain – Northern Group caribou herds

Graham

The Graham caribou herd previously served as the experimental control population to compare wolf reduction efforts in the South Peace to a non-treated herd. However, it became apparent that the Graham caribou population was declining at a rapid rate, so wolf reduction was initially

implemented for three years (2019–2021) and renewed for an additional five years in the fall of 2021. During the previous winter (2023- 24), the program was canceled due to poor conditions. In the winter of 2024-25, the conditions were marginal but much improved compared to the previous year. Wolf presence, however, was limited within the treatment area. Seven wolves were removed after a thorough search of a treatment area covering 9,300 km^2. The program cost $150,000, primarily associated with helicopter services, helicopter fuel, GPS collar purchases, and crew accommodations.

Three wolf packs were encountered in the core treatment area, while tracks from two or three other small packs were encountered on occasion near the periphery of the range. It was estimated that only two wolves remained in the core treatment area, and a total of six wolves across the broader area. This equated to a wolf reduction rate of 58% and a remaining wolf density of 0.8 wolves/1,000 km^2. Although the reduction rate for this range was lower than in previous years, the remaining wolf density is expected to continue to contribute positively to caribou population growth.

This herd continues to exhibit high calf recruitment in response to low wolf densities. Following an aerial survey in March 2025, it was estimated that calves made up 23% of the Graham caribou herd's population with a ratio of 48 calves per 100 cows, indicative of strong population growth. An aerial survey during the winter of 2024 suggested an increased population compared to the previous survey, which was conducted two years previously.

Itcha-Ilgachuz

The Itcha-Ilgachuz caribou population was selected as a recipient of wolf reduction treatments due to an extended period of rapid population declines. Initially, this herd was a recipient of a two-year wolf reduction program, undertaken during the winters of 2019-20 and 2020-21. During that two-year program, 113 wolves were removed within the treatment area. The program was renewed for an additional five years in the fall of 2021. The winter of 2024-25 was the sixth year of wolf reduction efforts for this herd, with 111 wolves lethally removed from a treatment area covering 25,540 km^2. The program cost $193,000, primarily associated with helicopter and fixed-wing aircraft services, as well as accommodations for crews.

Twelve wolf packs were detected, ranging in size from three to 19 wolves and with an average pack size of nine animals. One lone wolf was also detected. Winter weather presented good wolf tracking conditions and wolf abundance was high in the area, with a high recolonization rate over the previous year. Within the Itcha-Ilgachuz caribou range, a wolf reduction rate of 88% was achieved. Approximately 15 wolves remained within the treatment area following reduction efforts, for a remaining wolf density of 0.6 wolves/1,000 km^2. An aerial recruitment survey of the Itcha-Ilgachuz herd was not conducted in 2025, although recruitment survey data from March 2023 documented a high proportion of calves in the population at 24% – the highest level recorded since the 1980s. Results from recurring June population surveys have shown a stable

trend since 2020, following a rapid rate of decline prior to the implementation of wolf reduction measures. The survival rate of collared adult caribou was 94% for the 2023-24 biological year and 81% for the 2024-25 biological year. It is expected that the winter 2024-25 wolf reduction efforts will continue to contribute positively to caribou population stability or growth for this herd.

Tweedsmuir-Entiako

The Tweedsmuir-Entiako caribou herd had significant annual population declines (more than 10% per year) between 2014 and 2019, due to high predation rates by wolves. In response to the herd's decline, the Province implemented a two-year wolf reduction program beginning in the winter of 2020. The program was initially implemented for two years (2020 and 2021) and subsequently renewed for an additional five years in the fall of 2021. The winter of 2024-25 was the sixth year of the program, and 47 wolves were lethally removed from a treatment area covering 15,785 km^2. The program cost $250,100, primarily associated with helicopter services, fixed-wing aircraft services, and GPS collar purchases. Weather conditions were challenging at the start of the 2024-25 program. Following a period of extreme cold, snowfall had turned to rain just prior to the commencement of the field crew's operations. After four days of poor conditions, the crew left the treatment area but returned four weeks later when conditions had improved substantially.

During that winter's wolf reduction effort, 10 wolf packs were encountered, ranging in size from two to nine individuals and with an average pack size of six wolves. An estimated eight wolves remained within the treatment area for a remaining density estimate of 0.5 wolves/1,000 km^2 and a wolf reduction rate of 85%. The Tweedsmuir-Entiako caribou population has been increasing since predator reduction began, with an annual growth rate of 13% (calculated in 2025) based on calf recruitment and adult female survival rates.

There are other indications that predator reduction has had a positive effect on the Tweedsmuir-Entiako population. In October 2023, the largest minimum count since 2006 was recorded at 241 caribou. In March 2025, a calf recruitment survey showed a very high proportion of calves in the population (26%), indicative of continued population growth.

Takla

The Takla caribou herd has declined by approximately 75% over the past two decades, with an estimated 31 individuals remaining as of 2023. Due to these ongoing declines, Takla Nation and the Caribou Recovery Program collaboratively developed a wolf reduction program to help prevent the extirpation (local extinction) of the Takla herd. Takla Nation is leading recovery actions for this herd, including the implementation of aerial wolf reduction efforts. The program is being supported to proceed for an initial three years. The winter of 2024-25 was the second year of this program's implementation, and 53 wolves were removed in a treatment area covering 10,360

km^2. The program cost $167,100, primarily associated with helicopter costs and accommodations. Weather conditions in the winter of 2024-25 were much improved compared to the previous winter, although most large lakes did not freeze until late January. Two successful field operations were completed in February and March 2025.

Local reports suggest that an additional 42 wolves were removed via Indigenous and licensed hunting and trapping. It's estimated that the pre-reduction density of wolf populations in the treatment area was 11.8 wolves/1,000 km^2, and that 28 wolves remained in this area at the end of the winter, for a post-reduction wolf density estimate of 2.7 wolves/1,000 km^2.

A full census of the Takla caribou herd occurred during the winter of 2024-25. A report detailing all population metrics collected since 2023 (census and recruitment data and causes and rates of adult mortality) is being co-produced by Takla Nation and the B.C. government, and it should be available by the fall of 2025. In addition, Takla Nation is working on a five-year action plan for the herd.

Southern Mountain – Southern Group caribou herds

Central Selkirks

The Central Selkirks caribou herd is the southernmost caribou population in B.C. This small herd is at imminent risk of becoming functionally extirpated (locally extinct). Actions to reduce both wolves and cougars in this caribou range were initially implemented for two years (2020 and 2021) and subsequently renewed for an additional five years in the fall of 2021.

Predator reduction efforts in the winter of 2024-25 saw six wolves removed from a treatment area covering 2,872 km^2. Tracking conditions were favourable across the herd area for much of the winter. Additionally, six cougars were removed through ground-based removal within caribou habitat. The program cost $104,600, primarily associated with helicopter services and dog handlers. Based on a pre-removal wolf track survey and observations made during helicopter-based predator removal efforts, three small packs of wolves were documented within the treatment area, of which two were removed. Three wolves may have remained within the Central Selkirks treatment area, for a remaining wolf density of 1.0 wolves/1,000 km^2.

In the summer of 2024, a cougar attacked a GPS-collared caribou cow and calf, which was the first recorded mortality by a cougar or wolf in this caribou range since predator reduction began in 2019-20. The removal of predators in the Central Selkirks range is expected to contribute to caribou population stability. However, the small size of this herd increases the difficulty of it recovering completely. Despite successes in increasing calf survival (through a combination of predator reduction and maternal penning), a 2025 survey suggests that the number of caribou is still very low and the herd is close to functional extirpation. However, the rate of decline has decreased and may be stabilizing in response to recovery actions.

Columbia North

Wolf reduction has been underway for the Columbia North caribou herd since 2017 as a recovery measure under the Mountain Caribou Recovery Implementation Plan, and those efforts include portions of the adjacent Columbia South and Frisby-Boulder caribou ranges. Ground-based reduction of identified cougars has been implemented more recently to further recovery efforts. The program was initially implemented for five years (2017 to 2021) and subsequently renewed for an additional five years in the fall of 2021. The winter of 2024-25 was the ninth year of wolf reduction and sixth year of cougar reduction in this caribou range.

In the winter of 2024-25, wolf tracking conditions were favourable, and six wolves were detected in a treatment area covering 6,911 km^2. Four wolves were removed through helicopter-based, aerial shooting. The remaining two wolves were tracked to the north and left the treatment area. The remaining wolf density estimate was less than 0.3 wolves/1,000 km^2. No cougars were removed from the treatment area in the winter of 2024-25. Conditions within the cougar removal area were challenging and inconsistent due to low snow coverage for much of the winter, particularly in the western portion of the treatment area. The program cost $69,000 primarily associated with helicopter services and dog handlers.

Since 2017, annual population monitoring of Columbia North caribou (through censuses and calf recruitment surveys) have documented consecutive years of population growth, with the population estimated at 147 individuals in 2017 and increasing to 209 by 2022. However, a survey in April 2025 suggests that population growth has stabilized over the past two years. The low wolf density in this treatment area is expected to contribute positively to caribou population stability or growth in this range.

Hart Ranges

The Hart Ranges caribou population was selected for wolf reduction treatments due to rapid population declines recorded over the previous 10 years. The Hart Ranges contains the largest population designated as Southern Group of Southern Mountain Caribou and is expected to yield the largest population returns in response to wolf reduction efforts. The program was initially implemented for two years (2020 and 2021) and renewed for an additional five years in the fall of 2021. The winter of 2024-25 marked the sixth year of the predator reduction program in the Hart Ranges. A total of 14 wolves were lethally removed within a treatment area covering 13,730 km^2. An additional eight wolves were live-captured and translocated to Colorado as part of that state's wolf reintroduction efforts.

Snow conditions deteriorated over the course of the winter, somewhat hampering tracking and removal efforts in the treatment area. The program cost $61,200, primarily associated with helicopter services and radio collar purchases. An estimated 15 wolves remained within or immediately adjacent to the Hart Ranges treatment area, for a remaining wolf density of 1.1

wolves/1,000 km^2 – below the maximum wolf density of three wolves/1,000 km^2 that's recommended for caribou population recovery. This equated to a wolf reduction rate of 59%.

No aerial surveys of caribou were conducted in the Hart Ranges in 2025, but a caribou population survey within the range is tentatively planned for March 2026. This herd's population was estimated at 408 caribou in 2020 (just prior to the start of wolf reduction efforts) and appears to have increased to 722 individuals according to a 2024 aerial survey.

North Cariboo Mountains

Wolf reduction was initiated in the North Cariboo Mountains caribou herd in 2022 in response to a continued population decline. The herd declined from 284 to 187 individuals between 2002 and 2018. Only 145 caribou were estimated to be present in the North Cariboo Mountains range in 2020.

The North Cariboo Mountains herd is one of the larger remaining subpopulations of the Southern Group of Southern Mountain Caribou, and its range is adjacent to areas undergoing wolf reduction in the Hart Ranges. In 2020, an estimated 46 wolves in six packs were in the North Cariboo range (7.7 wolves/1,000 km^2), based on a winter snow track survey. In the winter of 2024-25, nine wolves were removed from the North Cariboo Mountains treatment area – the fourth year of wolf reduction operations in the area. The program cost $60,000, primarily associated with helicopter services and GPS collar purchases.

It was estimated that seven wolves remained within the treatment area following the reduction efforts, for a remaining wolf density of 0.9 wolves/1,000 km^2 and a 56% reduction rate. Based on preliminary results of a March 2025 survey, the caribou population in this range was estimated at 206 individuals, representing a 31% population increase since the previous estimate of 157 individuals in 2022. The proportion of calves observed in the population was 20%, which is also indicative of population growth. The 2025 survey was the first population estimate since the implementation of wolf reduction and suggests strong evidence of a positive response to wolf reduction efforts within the treatment area.

Barkerville

The Barkerville caribou population was selected for wolf reduction treatments due to a continued period of population declines. The survival rate for radio-collared female caribou in 2022-23 was only 64.2%, which is considered very low. The population declined approximately 17% annually from 2020 to 2023. Following consultation and engagement with First Nations and tenure holders in the fall of 2023, a three-year wolf reduction program was approved to support this herd's recovery. The winter of 2024-25 was the second year of wolf reduction activities for this herd but, due to challenging tracking conditions, no wolves were removed from a treatment area covering 5,880 km^2.

Three wolf packs were detected, ranging in size from one to five wolves, with an average pack size of three wolves. Despite adequate snow coverage, wolf tracking conditions were not ideal at the time of wolf reduction efforts. Wolves walked on top of hard-crusted snow throughout the treatment area, making it challenging to detect their presence. Wolf populations appeared to be low in the treatment area, with a pre- reduction density estimated at 1.4 wolves/1,000 km^2. However, due to the challenging tracking conditions (and thick forest cover throughout the treatment area), it is probable that additional wolf packs were simply not detected.

An aerial population survey for the Barkerville caribou herd occurred in March 2025, which resulted in a population estimate of 55 individuals – an increase from 47 individuals in 2023. The percentage of calves in the population was 20%, which was the highest recorded since 2011. The survival rate of collared adult female caribou for the 2023-24 biological year was 83.5%. Although no wolves were removed from the treatment area in 2024-25, the relatively low wolf density (perhaps due to the previous year's predator reduction efforts), should contribute positively to this herd's population stability or growth.

B.C. Parks

Predator reduction within B.C. Parks is authorized under the B.C. *Park Act* and the issuance of Letters of Authorization. During predator reduction operations in the winter of 2024-25, 32 wolves were lethally removed within provincial park boundaries. The numbers of wolves removed in B.C. Parks identified below is included in the totals identified in Table 1 of this report:

- 20 wolves removed from Northern Rocky Mountains Park (Pink Mountain Treatment Area)
- 2 wolves removed from Redfern-Keily Park (Pink Mountain Treatment Area)
- 3 wolves removed from Klinse-Za/Twin Sisters Park (South Peace Treatment Area)
- 2 wolves removed from Gwillim Lake Provincial Park (South Peace Treatment Area)
- 1 wolf removed from Bearhole Lake Provincial Park (South Peace Treatment Area)
- 2 wolves removed from Tweedsmuir Park (Tweedsmuir Treatment Area)
- 1 wolf removed from Sugarbowl-Grizzly Den Provincial Park and Protected Area (North Cariboo Mountains Treatment Area)
- 1 wolf removed from Nation Lakes Provincial Park (Takla Treatment Area)

Conclusion

Ongoing monitoring of caribou herds in British Columbia continues to demonstrate the utility of predator reduction as an effective management tool to help at-risk caribou populations recover. The current period of ministerial support for this recovery action (following engagement and consultation with First Nations, tenure-holders and the broader public in 2021) expires at the end of March 2026. At that point, the Caribou Recovery Program will assess which herds would be suitable candidates for continued predator reduction operations consistent with the Caribou Recovery Program Interim Aerial Wolf Reduction Procedure.

Despite suboptimal weather conditions in several treatment areas and some lower wolf removal rates, the predator reduction activities undertaken during the winter of 2024-25 were largely successful and are expected to contribute positively to caribou population recovery. A rigorous and adaptive predator reduction program can help reverse caribou population declines and prevent extirpations, while other longer-term habitat solutions are pursued.

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